

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) In a cellular radio network having a plurality of base stations and a mobile switching center, a method for receiving and transmitting signals, the method comprising:

receiving a plurality of radio signals on a plurality of channels at different frequencies using a single radio receiver at said base station, wherein each of said channels has a channel bandwidth;

continuously scanning said incoming signals and saving said signals to a buffer with a first processor;

reading, processing and time-multiplexing said buffered signals with a second processor, wherein the speed of said first and second processors is faster than the multiplication of the number of channels and the channel bandwidths;

transmitting said time-multiplexed radio signal via a single physical link to a mobile switching center;

demultiplexing said time-multiplexed radio signal into independent radio signals corresponding to said incoming signals at said mobile switching center with a third processor;

processing said independent radio signals with said third processor; and

routing said independent radio signals to the proper end users.

2. (Previously Presented) The method defined in claim 1, wherein said cellular radio network comprises a Frequency Division Multiple Access network.

3. (Previously Presented) The method defined in claim 1, wherein said cellular radio network comprises a Time Division Multiple Access network.

4. (Previously Presented) The method defined in claim 1, wherein said cellular radio network comprises a Global System for Mobile Communications.

5. (Previously Presented) The method defined in claim 1, wherein said cellular radio network comprises a Code Division Multiple Access network.

6. (Currently Amended) A system for receiving and transmitting cellular radio signals in a cellular radio network, the system comprising:

a radio receiver at a base station for receiving a plurality of radio signals at

different frequencies on a plurality of channels, wherein each of said channels has a channel bandwidth;

a first processor for continuously scanning said incoming signals and saving said signals to a buffer;

a second processor for reading, processing and time-multiplexing said buffered signals, wherein the speed of said first and second processors is faster than the multiplication of the number of channels and the channel bandwidths;

means for transmitting said time-multiplexed radio signal via a single physical link to a mobile switching center;

a third processor for demultiplexing said time-multiplexed radio signal into independent radio signals corresponding to said incoming signals at said mobile switching center and processing said independent radio signals; and

means for routing said independent radio signals to the proper end users.

7. (Previously Presented) The system defined in claim 6, wherein said cellular radio network comprises a Frequency Division Multiple Access network.

8. (Previously Presented) The system defined in claim 6, wherein said cellular radio network comprises a Time Division Multiple Access network.

9. (Previously Presented) The system defined in claim 6, wherein said cellular radio network comprises a Global System for Mobile Communications network.

10. (Previously Presented) The system defined in claim 6, wherein said cellular radio network comprises a Code Division Multiple Access network.